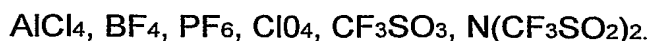


CLAIMS

1. An electrochemical cell which comprises the following:-
 - (i) a positive electrode which, in addition to the cathodic active material, contains a compound MA_xO_y , where M is an alkali or alkaline earth metal and A is a non-metallic element where $0.3 \leq x \leq 2.0$ and $1.3 \leq y \leq 4.0$, such that on charging, the acid anhydride A_xO_y is generated "in situ",
and
 - (ii) a solid composite polymer film acting as separator whose structural units contain basic functional groups containing nitrogen atoms in 5 or 6 member heterocyclic rings or in tertiary aliphatic configuration into which is incorporated an ionisable salt LiX , having a higher decomposition voltage than MA_xO_y , where X is an acid radical.
2. An electrochemical cell as claimed in claim 1 wherein the alkali metal is lithium.
3. An electrochemical cell as claimed in claim 1 or claim 2 wherein the non-metallic element is sulphur, nitrogen, carbon or phosphorus.
4. An electrochemical cell as claimed in any one of claims 1 – 3 wherein the acid radical X is one or more of the following:-



5. An electrochemical cell as claimed in claim 1 wherein the alkali metal M is lithium, and the element A is sulphur.
6. An electrochemical cell as claimed in claim 1 wherein the compound MA_xO_y is lithium dithionite.
7. An electrochemical cell as claimed in claim 1 wherein the compound MA_xO_y is lithium sulphite.
8. An electrochemical cell as claimed in claim 1 wherein the compound MA_xO_y is sodium dithionite.
9. An electrochemical cell as claimed in claim 1 wherein the solid polymer is poly(4-vinylpyridine), less than 5% cross linked.
10. An electrochemical cell as claimed in claim 1 wherein the solid polymer is poly(vinylpyrrolidone).
11. An electrochemical cell as claimed in claim 1 wherein the solid polymer is thermally restructured poly(acrylonitrile) $-(CH=C-CN)_n-$.
12. An electrochemical cell as claimed in any one of claims 1 – 11 wherein the cathode active material is lithium cobalt oxide $LiCoO_2$ or a mixed lithium nickel cobalt oxide $LiNi_{0.85}Co_{0.15}O_2$.

13. An electrochemical cell as claimed in any one of claims 1 – 11 wherein the cathode active material is lithium sulphite and a transition metal oxide such as VO_2 or MnO_x where $2 \geq x \geq 1$.

14. An electrochemical cell as claimed in any one of claims 1 - 13 when used as a primary or rechargeable battery or a supercapacitor.